Cape Cod.—A fleet of fifteen or more vessels were frozen in during the latter half of the month.

Harbors and rivers were first freed from ice on the following dates: 22d, Sandy Hook; Louisville, Ky., (closed sixteen days;) 23d, Detroit, Mich.; Dutch Island, R. I.; New Haven, Conn., (closed fourteen days,) Newport, R. I.; 24th, Pittsburgh, Penn., Washington, D. C.; 25th, Morgantown, W. Va.; Tarentum, Penn., (closed fifty-three days,) New York bay; 26th, Springfield, Mass., St. Louis, Mo.

TEMPERATURE OF WATER.

The maximum and minimum temperatures of the water are given in the table on Chart No. II. The temperatures of the bottom water have been on the average above that of the air for the following stations: *Atlantic and Gulf stations.*—Eastport, 15°; Portland, 10°; Wood's Hole, 7°; New London, 7°; New York, 4°.5; Jacksonville, 4°; Punta Rassa, 6°; Mobile, 0°.5. *River stations.*—Pittsburgh, 12°.5; Louisville, 6°; Knoxville, 7°.5, Nashville, 3°.5; St. Louis, 6°; Cairo, 4°.

The average temperature of the air and bottom water has been sensibly the same at Wilmington, Augusta, Charleston and Key West.

The water temperatures have been lower than the air at Savannah, 1°; Memphis, 1°.5; Shreveport, 1°; Galveston, 1°, and Indianola, 1°. Throughout the month the water from New Jersey to Nova Scotia has been from 28 to 34° in temperature.

ATMOSPHERIC ELECTRICITY.

(1) *Thunder Storms.*—Storms accompanied by electricity, with hail, prevailed very widely on the 23d, 24th and 25th. The general distribution of the storms for the month is shown by the fact that they occurred on the 2d, in Ga., Tenn., Ala. and Ind.; 3d, in Ga. and Tenn.; 10th, Ala. and La.; 11th, Ga.; 19th, La.; 20th, Kan.; 22d, Kan. and La.; 23d, Ala., Ga., Ill., Ind., Iowa, Kan., Ky., Mich., Mo., Neb., N. C., Tenn. and Wis.; 24th, Ala., Ga., Ill., Ind., Ky., Me., Mich., N. Y., N. C., Ohio, Penn., S. C., Tenn. and Va.; 25th, Ala., Ga., Mass., N. C., Tenn. and Va.; 28th, Ill., Ind., Kan., Mo. and Tenn.

(2) *Auroras.*—The principal auroras of the month were those of the 26th and 28th. The former, as seen at stations in the West, was more finely developed than as seen in New England; it was observed over an unusually large area. In detail, auroras were visible as follows: On the 3d, in Tex.; 6th, N. Y.; 7th, Me., Minn., N. Y., Vt., and Mich.; 9th, N. J.; 14th, Mo.; 18th, Vt.; 24th, Conn. and Me.; 25th, N. Y. and Va.; 26th, Me., Vt., N. H., Mass., Conn., N. Y., N. J., Penn., Del., Md., Va., W. Va., Can., Fla., Tenn., Mich., Ind., Ill., Wis., Minn., Iowa, Neb. and Kan.; 27th, Iowa, Ill., Md., N. Y., N. J., Va. and Tex.; 28th, Me., Vt., N. Y., Conn., R. I., Mass., Tenn. and Ind.

OPTICAL PHENOMENA.

(1) *Solar Halos.*—The record of solar halos for this month is unusually large, even for so cold a month; they were observed as follows: 1st, Mass. and Ala.; 2d, N. Y., Ga., Conn., Mass., Del., N. H. and Pa.; 3d, Minn., Ala., Ill., Ind., Iowa., Kan., Mass., Mo., Neb. and Va.; 4th., Col., Tex., Mich., Iowa, Ind., Ill. and Ala.; 5th, Ala., Ind., Neb., N. Y. and Wis.; 6th, Ill., Ind., Iowa, Kan., Neb., N. H., Ohio, N. H., Tenn. and Wis.; 7th, Mass., Minn., Conn., Ill., Me., N. H., N. Y., Pa. and Wis.; 8th, Ind., Tex., Ill., Me., Mass., Mich., N. H., N. Y., Pa. and Vt.; 9th, Ga., Ill., Ind., Me., Mass, Mich., N. Y. and Wis.; 10th, Neb., N. Y., Pa. and Va.; 11th. Minn., Ill., Ind., Iowa, Neb. and Wis.; 12th, N. M., Del., Me., Mich., N. J., N. Y., Ohio and Wis.; 13th, Mass., Mich. and N. Y.; 14th, Mass. and N. M.; 15th, Ind., N. H. and N. Y.; 16th, Minn., Col. and Mich.; 17th, Mass., Ind., Iowa, Kan., Mich., Neb., N. Y. and Ohio; 18th, Mass., N. Y., D. C., Ill., Ind., Mich., Pa. and Wis.; 19th, Me., N. H. and N. Y.; 20th, Iowa; 21st, D. C., Pa., N. J., Mich. and Wis.; 22d, Ala., Neb., N. H., N. Y. and Wis.; 23d, Mass., Pa., W. Va., Conn., Del., Md., N. H., N. Y. and Wis.; 24th, Iowa, Kan., Me., Neb. and Wis.: 25th, Neb.; 26th, Iowa, Neb. and Ohio; 28th, Ala., Ga., Tenn. and Va.